HEALTH AND SAFETY PLAN

Raritan Bay Slag Pile Site
Old Bridge, New Jersey 08871

Prepared for:

U.S. Environmental Protection Agency
Region 2
2890 Woodbridge Avenue
Edison, New Jersey 08837

Prepared by:

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May 15, 2009

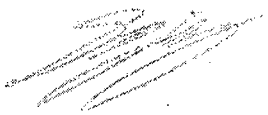
Project No: ~~TBD~~ 112160

HEALTH AND SAFETY PLAN APPROVAL

This Health and Safety Plan (HASP) was prepared for employees performing a specific, limited scope of work. It was prepared based on the best available information regarding the physical and chemical hazards known or suspected to be present on the project site. While it is not possible to discover, evaluate, and protect in advance against all possible hazards, which may be encountered during the completion of this project, adherence to the requirements of the HASP will significantly reduce the potential for occupational injury.

By signing below, I acknowledge that I have reviewed and hereby approve the HASP for the Raritan Bay Slag Pile site. This HASP has been written for the exclusive use of AECOM, Inc., its employees, and subcontractors. The plan is written for specified site conditions, dates, and personnel, and must be amended if these conditions change.

Written by:



Sean Liddy, CHST — 5/15/2009

Safety Professional — Date

Reviewed by:

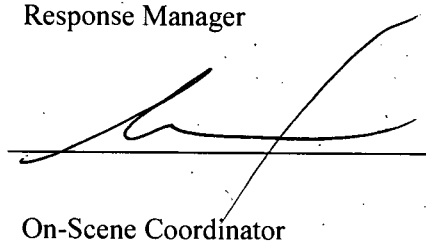
Herold Hannah, CIH, CSP — Date

Safety Professional

Approved by:

Rob Flowers, PMP, CHMM — Date

Response Manager



5/18/2009

On-Scene Coordinator — Date

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1.0 INTRODUCTION

This Health and Safety Plan (HASP) (including Attachments A-E) provides a general description of the levels of personal protection and safe operating guidelines expected of each employee or subcontractor associated with the environmental services being conducted at the Raritan Bay Slag Pile site, located in Old Bridge, New Jersey. This HASP also identifies chemical and physical hazards known to be associated with the AECOM-managed activities addressed in this document.

HASP Supplements will be generated as necessary to address any additional activities or changes in site conditions which may occur during field operations. Once generated, each Supplement will be inserted in Attachment E and reviewed/acknowledged by field personnel prior to the start of applicable work activities.

1.1 GENERAL

The provisions of this HASP are mandatory for all AECOM personnel engaged in fieldwork associated with the environmental services being conducted at the subject site. A copy of this HASP, any applicable HASP Supplements and the AECOM Safety, Health & Environmental (SH&E) Standard Operating Procedures (SOPs) shall be maintained on site and available for review at all times. Record keeping will be maintained in accordance with this HASP and the applicable SH&E SOPs. In the event of a conflict between this HASP, the SOPs and federal, state, and local regulations, workers shall follow the most stringent/protective requirements.

1.2 POLICY STATEMENT

It is the policy of AECOM to provide a safe and healthy work environment for all of its employees. AECOM considers no phase of operations or administration is of greater importance than injury and illness prevention. Safety takes precedence over expediency or shortcuts. Every accident and every injury is avoidable. At AECOM, we believe every accident and every injury is avoidable. We will take every reasonable step to reduce the possibility of injury, illness, or accident. This policy is detailed in SH&E 001, *Safety, Health, and Environmental Policy Statement.*

The practices and procedures presented in this HASP and any supplemental documents associated with this HASP are binding on all AECOM employees while engaged in the subject work. In addition, all site visitors shall abide by these procedures as the minimum acceptable standard for the work site. Operational changes to this HASP and supplements that could affect the health or safety of personnel, the community, or the environment will not be made without prior approval of the AECOM Project Manager (PM) and the assigned AECOM Safety Professional.

1.3 REFERENCES

This HASP meets the regulatory requirements and guidelines established in the following documents:

- Title 29, Part 1910 of the Code of Federal Regulations (29 CFR 1910), *Occupational Safety and Health Standards*, with special attention to Section(s) 120, *Hazardous Waste Operations and Emergency Response* and Section 1025, *Lead.*
- Title 29, Part 1926 of the Code of Federal Regulations (29 CFR 1926), *Safety and Health Regulations for Construction*, with special attention to Section 62, *Lead.*
- National Institute for Occupational Safety and Health (NIOSH)/OSHA/U.S. Coast Guard (USCG)/EPA, *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities*, Publication No. 85-115, 1985.

1.3.1 AECOM Safety, Health and Environmental Website

AECOM's Safety Website is located on the AECOM Corporate Intranet, and is available for all AECOM employees as a resource for safety information, updates, and procedures. Project management and employees are encouraged to visit the website for key safety items and information, such as:

- The AECOM Employee Orientation,
- Contact information for AECOM's Safety Department staff,
- Safety Forms,
- Safety Program Manuals,
- Safety Alerts and other communications,
- Accident, Injury, and Near-Miss Reporting Requirements,
- e-Tracking
- Links to safety and regulatory information,
- Training Resources,
- Ergonomics Information, and
- A feedback link to the AECOM Safety Director.

The website is located at the following web address:

http://etonilne.earthtech.com/etonline/healthsafety/

Please note that the website can only be accessed when connected to AECOM's Wide-Area Network (e.g., via iPass).

1.4 MODIFICATIONS

Every effort has been made to address the hazards associated with the types of chemical contamination that may be encountered at this facility. Similarly, this document also discusses the physical hazards associated with the typical types of activities that may be performed by AECOM employees or subcontractors during on-site activities. Unanticipated site-specific conditions or situations may occur during the implementation of the proposed scope of work that are not addressed in this document. As such, this HASP must be considered a working document that is subject to change to meet the needs of each site.

Prior to working at this site, the Project Manager (PM) or Field Technician will review with the Regional Health and Safety Manager (RHSM) or his designee, the scope of work and the expected nature and extent of contamination at the site. If unique site hazards are present or different tasks are proposed that have not been addressed in this HASP, it will be necessary to modify this HASP. All proposed modifications to this HASP must be reviewed and approved by the RHSM before such modifications are implemented in the field. Modifications to the HASP will be incorporated into the document as addenda. Modifications will be logged in a HASP Modification Tracking Form.

2.0 SITE INFORMATION AND SCOPE OF WORK

AECOM will conduct environmental services at the Raritan Bay Slag Pile site. Work will be performed in accordance with the applicable Statement of Work (SOW) and associated Work Plans developed for Raritan Bay Slag Pile site. Deviations from the listed SOW will require that a Safety Professional review and changes made to this HASP, to ensure adequate protection of personnel and other property.

The following is a summary of relevant data concerning the Raritan Bay Slag Pile site, and the work procedures to be performed. The Work Plan, prepared by AECOM as a companion document to this HASP, provides significantly greater details concerning both site history and planned work operations.

2.1 SITE INFORMATION

This section provides a general description and historical information associated with the site.

2.1.1 General Description

The Raritan Bay Slag Site is located in the Laurence Harbor section of Old Bridge and in Sayreville, Middlesex County, New Jersey.

2.1.2 Site Background/History

The Laurence Harbor seawall, which makes up part of the Site, was reported to have had metal slag from blast furnace bottoms deposited along the beachfront in the late 1960s and early 1970s. Approximately 2,500 feet of the seawall have been contaminated. Elevated levels of lead, antimony, arsenic and copper have been identified by the New Jersey Department of Environmental Protection (NJDEP) along the seawall near the area where the processing by-products were deposited. While site investigations were being conducted another area of concern was identified on the Sayreville waterfront. This area consists of the western jetty at the Cheesequake Creek inlet and waterfront area. At the request of the NJDEP, EPA evaluated the Raritan Bay Slag site for a removal action under Superfund.

2.1.3 Previous Investigations

Samples collected previously by the NJDEP from the nearby beach and park were evaluated by the New Jersey Department of Health and Senior Services. Old Bridge Township placed a temporary fence around the area of concern and posted warning signs in the park along the edge of the seawall. Letters were sent to the residents of Laurence Harbor in 2007 to notify them of NJDEP's findings.

The removal assessment, which also includes the gathering of historical information and available data, is ongoing. The assessment will include the collection of soil, sediment, water, biological and waste samples along the seawall, jetty and the beaches near the areas of concern.

2.2 SCOPE OF WORK

Additional information regarding specific tasks for the site will be forthcoming. Tasks currently scheduled for the site are as follows:

- Fence Installation
- Posting of Signage

2.2.1 Additional Work Operations

The following additional tasks will also be performed as necessary in support of planned site activities:

Mobilization/Demobilization: Mobilization and demobilization represent limited pre and post-task activities. These activities include driving to and from the site; initial site preparations, such as trailer and toilet facilities setup; and post-work activities, such as removing files and office equipment and general housekeeping.

Equipment Decontamination: AECOM and subcontractor personnel will perform decontamination of equipment used to perform work within controlled work areas.

Investigative-Derived Waste (IDW) Management: IDW will be collected and categorized as non-hazardous or hazardous. Potentially hazardous IDW (purge water, and decontamination fluids, and soil cuttings [if any]) will be tested and disposed of within 90 calendar days of completing the field activities. Potentially hazardous IDW waste will be staged onsite and then delivered to an IDW storage facility for processing. Non-hazardous IDW (normal trash) will be disposed of in a timely fashion during fieldwork.

3.0 PROJECT HEALTH AND SAFETY ORGANIZATION

3.1 ON-SCENE COORDINATOR [ANDREW CONFORTINI]

The OSC, as the representative of the U.S. EPA is responsible for overall project administration and for coordinating health and safety standards for all individuals on site at all times. All U.S. EPA, AECOM, and contractors' health and safety guidelines and requirements, as well as all applicable OSHA standards shall be applied. The OSC is the overall site safety officer and will be responsible for the health and safety of site visitors. However, each contractor (as an employer under OSHA) is also responsible for the health and safety of its employees. If there is any dispute with regard to health and safety, the following procedures shall be followed:

1. Attempt to resolve the issue on site; and
2. If the issue cannot be resolved, site personnel shall consult off-site health and safety personnel for assistance and the specific task or operation in dispute shall be discontinued until the issue is resolved.

3.2 SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

The Superfund Technical Assessment and Response Team (START) is responsible for providing the OSC with assistance and support in regard to all technical, regulatory and safety aspects of site activity. The START is also available to advise the OSC on matters relating to sampling, treatment, packaging, labeling, compatibility, transport, and disposal of hazardous materials, but is not limited to the above-mentioned.

3.3 PROGRAM MANAGER [ROB FLOWERS, PMP, CHMM]

The AECOM Program Manager (PM) has overall management authority and responsibility for all AECOM personnel and their safety. The specific safety responsibilities for the PM are listed in Section 2.2 of SH&E 004, *Operational SH&E Structure and Responsibilities*. The PM will provide the Response Manager with the appropriate work plans, personnel, equipment, and resources necessary to complete the associated work tasks in a safe and healthy manner.

3.4 RESPONSE MANAGER [CARL DUFFEY]

The Response Manager (RM) has the overall responsibility and authority to direct AECOM personnel at the job site according to the provided work plans.

3.4.1 Responsibilities

The RM is responsible to:

- Understand safety responsibilities listed in Section 2.2 of SH&E 004, *Operational SH&E Structure and Responsibilities* and be familiar with the requirements of all applicable SH&E SOPs.
- Discuss deviations from the work plan with the PM and an AECOM Safety Professional.
- Discuss safety issues with the PM, AECOM Safety Professional, and field personnel.
- Assist the SSO with the development and implementation of corrective actions for site safety deficiencies.
- Assist the SSO with the implementation of this HASP and ensuring compliance.
- Assist the SSO with inspections of the site for compliance with this HASP and applicable SH&E SOPs.

3.4.2 Authority

The RM has authority to:

- Verify that all operations are in compliance with the requirements of this HASP, and halt any activity which poses a potential hazard to personnel, property or the environment.
- Temporarily suspend individuals from field activities for infractions against the HASP pending consideration by the SSO, the Safety Professional, and the PM.

3.4.3 Qualifications

In addition to being Hazardous Waste Operations and Emergency Response (HAZWOPER)-qualified (see Section 4.1), the RM is required to have completed an 8-hour HAZWOPER Supervisor Training Course in accordance with 29 CFR 1910.120 (e)(4).

3.5 SITE SAFETY OFFICER

The RM will also perform the duties of the SSO unless an alternate SSO is named. If the SSO must leave the site during field activities, an alternate SSO will be selected by name and informed of his/her duties (see below).

3.5.1 Responsibilities

The SSO is responsible to:

- Manage all SH&E activities and documentation for the project in accordance with AECOM's SH&E SOPs, this HASP, and associated SH&E requirements.
- Update the site-specific HASP to reflect changes in site conditions or the scope of work. HASP updates must be reviewed and approved by the Safety Professional.
- Be aware of changes in AECOM Safety Policy. Changes are posted on the AECOM Safety Website (see Section 1.3 of this HASP).
- Monitor the lost time incidence rate for this project and work toward improving it.
- Inspect the site for compliance with this HASP and the SH&Es using the appropriate audit inspection checklist provided by an AECOM Safety Professional.
- Work with the RM and PM to develop and implement corrective action plans to correct deficiencies discovered during site inspections. Deficiencies will be discussed with project management to determine appropriate corrective action(s).
- Contact the Safety Professional for technical advice regarding safety issues.
- Provide a means for employees to communicate safety issues to management in a discreet manner (i.e., suggestion box, etc.).
- Determine emergency evacuation routes, establishing and posting local emergency telephone numbers, and arranging emergency transportation
- Ensure that all site personnel and visitors have received the proper training and medical clearance prior to entering the site
- Establish any necessary controlled work areas (as designated in this HASP or other safety documentation)
- Initiate tailgate safety meetings and maintain attendance logs and records
- Discuss potential health and safety hazards with the RM, the Safety Professional, and the PM
- Select an alternate SSO by name and inform him/her of their duties, in the event that the SSO must leave or is absent from the site. The alternate SSO must be approved by the PM.

3.5.2 Authority

The SSO has authority to:

- Verify that all operations are in compliance with the requirements of this HASP.
- Issue a "Stop Work Order" under the conditions set forth in Section 4.8 of this HASP.
- Temporarily suspend individuals from field activities for infractions against the HASP pending consideration by the RM, Safety Professional and the PM.

3.5.3 Qualifications

In addition to being HAZWOPER-qualified (see Section 4.1), the SSO is required to have completed an 8-hour HAZWOPER Supervisor Training Course in accordance with 29 CFR 1910.120 (e)(4).

3.6 EMPLOYEES

3.6.1 Employee Responsibilities

Responsibilities of employees associated with this project include, but are not limited to:

- Immediately report any injury, illness, or safety incident to the SSO or RM
- Notifying the SSO, in writing or verbally, of unsafe conditions and acts.
- Understanding and abiding by the policies and procedures specified in the HASP and other applicable safety policies, and clarifying those areas where understanding is incomplete.
- Providing feedback to health and safety management relating to omissions and modifications in the HASP or other safety policies.

3.6.2 Employee Authority

The health and safety authority of each employee assigned to the site includes the following:

- The right to refuse to work and/or stop work authority when the employee feels that the work is unsafe (including subcontractors or team contractors), or where specified safety precautions are not adequate or fully understood.
- The right to refuse to work on any site or operation where the safety procedures specified in this HASP or other safety policies are not being followed.
- The right to contact the SSO or the Safety Professional at any time to discuss potential concerns.

3.7 SAFETY PROFESSIONAL

The Safety Professional is the member of the AECOM Safety, Health and Environmental Department assigned to oversee health and safety requirements for the project and provide any needed technical support. The Safety Professional will be the first point-of-contact for all of the project's health and safety matters. Duties include the following:

- Approving this HASP and any required changes.
- Approving of the designated SSO (if RM does not cover SSO duties).
- Providing sound technical safety support.
- Reviewing all personal exposure monitoring results.
- Investigating any reported unsafe acts or conditions.

3.8 SUBCONTRACTORS

The requirements for subcontractor selection and subcontractor safety responsibilities are outlined in SH&E 303, *Evaluation of Subcontractors*. Each AECOM subcontractor is responsible for assigning specific work tasks to their employees. Each subcontractor's management will provide qualified employees and allocate sufficient time, materials, and equipment to safely complete assigned tasks. In particular, each subcontractor is responsible for equipping its personnel with any required personnel protective equipment (PPE).

AECOM considers each subcontractor to be an expert in all aspects of the work operations for which they are tasked to provide, and each subcontractor is responsible for compliance with the regulatory requirements that pertain to those services. Each subcontractor is expected to perform its operations in accordance with its own unique safety policies and procedures, in order to ensure that hazards associated with the performance of the work activities are properly controlled. Copies of any required safety documentation for a subcontractor's work activities will be provided to AECOM for review prior to the start of onsite activities, if required.

Hazards not listed in this HASP but known to any subcontractor, or known to be associated with a subcontractor's services, must be identified and addressed to the AECOM PM or the Site Supervisor prior to beginning work operations. The Site Supervisor or authorized representative has the authority to halt any

subcontractor operations, and to remove any subcontractor or subcontractor employee from the site for failure to comply with established health and safety procedures or for operating in an unsafe manner.

3.9 VISITORS

Authorized visitors (e.g., client representatives, regulators, AECOM management staff, etc.) requiring entry to any work location on the site will be briefed by the RM on the hazards present at that location. Visitors will be escorted by the RM or designee at all times at the work location and will be responsible for compliance with their employer's health and safety policies. In addition, this HASP specifies the minimum acceptable qualifications, training and personal protective equipment which hare required for entry to any controlled work area; visitors must comply with these requirements at all times.

Unauthorized visitors, and visitors not meeting the specified qualifications, will not be permitted within established controlled work areas.

4.0 SAFETY PROGRAMS

4.1 SH&E STANDARD OPERATING PROCEDURES

SH&E standard operating procedures (SOPs) have been developed as guidance documents for specific work tasks and overall SH&E management. In the table below, SOPs containing specific information regarding tasks anticipated for this project have been identified. A copy of the SH&E SOP Manual must accompany this HASP.

Table 4-1. Applicable SOPs

	SOP #	TOPIC		SOP #	TOPIC
		SH&E 000 Series			SH&E 200 Series
☒	001	SH&E Policy Statement	☒	201	General Safety Rules
☒	002	SH&E Dept. Structure & Responsibilities	☒	202	Safety Meetings
☒	003	Operational SH&E Structure & Responsibilities	☒	203	Accident Prevention Program – Requirements for SH&E Documentation
☒	004	SH&E Administration Support	☒	204	Task Hazard Analysis
☒	005	Review of Safety Manual	☒	205	Emergency Action Planning & Prevention
		SH&E 100 Series	☒	206	Stop Work Authority
☒	101	Injury, Illness, & Near Miss Reporting	☒	207	Contractor & Subcontractor SH&E Requirements
☒	102	Incident Investigation and Review	☒	208	General Housekeeping, Hygiene, and Sanitation
☐	103	Regulatory Agency Inspections	☒	209	Disciplinary Actions/Accountability
☒	104	SH&E Audits, inspections, and Corrective Actions	☒	210	Walking-Working Surfaces Protection
☒	105	SH&E Procedure Variance			SH&E 300 Series
☒	106	Drug-Free Workplace Program	☒	301	Hazardous Waste Operations (HAZWOPER)
☐	107	Modified Duty Program	☐	302	Office Safety
☒	108	Medical Monitoring & Surveillance	☐	303	OE and UXO Operations
☒	109	Hearing Conservation Program	☐	304	Landfill Quality Assurance and Operations
☐	110	Fetal Protection Program	☐	305	Demolition Operations
☒	111	Employee Exposure Monitoring Program	☐	306	Structural Steel Operations
☒	112	Respiratory Protection Program	☐	307	Underground Construction & Tunneling
☒	113	Personal Protective Equipment (PPE)	☐	308	Rail Operations
☒	114	Safety Training Programs	☒	309	Marine Operations - Working On/Near Water
☒	115	Hazard Communication Program	☐	310	Overhead Electrical Lines
☒	116	Driver and Vehicle Safety	☐	311	Blasting and Use of Explosives
☐	117	Commercial Vehicle Program			SH&E 400 Series
☐	118	Confined Space Entry Program	☒	401	Cleaning & Grubbing
☐	119	Lock-Out / Tag-Out Program	☐	402	Excavation & Trenching
☐	120	Fall Protection Program	☐	403	Drilling
☐	121	Electrical Safety Program	☒	404	Manual Lifting
☐	122	Environmental Compliance Program	☐	405	Handling Drums & Large Containers
☐	123	Ergonomics Program	☐	406	Drum Sampling
☒	124	Heat Stress Prevention Program	☐	407	Tank & Large Container Sampling
☐	125	Cold Stress Prevention Program	☐	408	Unknown Hazardous Waste Drum Handling
☐	126	Radiation Safety Program	☐	409	Tank Cleaning
☐	127	Radiation Protection Plans	☐	410	Tank Removal & Demolition
☐	128	Radiological Exposure Assessment	☐	411	Welding, Cutting, & other Hot Work
☐	129	ALARA	☐	412	Line Entry
☐	130	Non-Ionizing Radiation	☐	413	Cylinder Disposition & Decommissioning
☐	131	Safety Assessment Program	☐	414	Pile Driving
☐	132	Competent Persons	☐	415	Abrasive Blasting

APPLICABLE STANDARD OPERATING PROCEDURES
(continued)

	SOP #	TOPIC
		SH&E 500 Series
☐	501	Ladders
☐	502	Scaffolding
☐	503	Machine Guarding
☐	504	Woodworking and Metalworking Machines
☒	505	Powered Hand Tools
☒	506	Manual Hand Tools
☐	507	Powder-Actuated Tools
☒	508	Fire Extinguishers
☐	509	Refuse Packer Units
☒	510	High Pressure Washers
☐	511	All Terrain Vehicles
☐	512	Forklifts
☒	513	Heavy Equipment
☐	514	Manlifts
☐	515	Cranes, Lifting Devices & Rigging Requirements
☐	516	Equipment Safety Cards
☒	517	Traffic Safety

	SOP #	TOPIC
		SH&E 400 Series (continued)
☐	416	Concrete & Masonry Work
☐	417	Automotive Service Operations
☐	418	Spray Finishing & Dip Tanks
☐	419	Cleanup of Bird Excrement/Amplified Fungal Growth
		SH&E 600 Series
☒	601	Hazardous Materials Shipping
☐	602	Process Safety Management
☐	603	Chemical Hygiene Plan
☒	604	Decontamination
☐	605	Protection from Solvents
☐	606	Flammable & Combustible Materials
☐	607	Chemical and Biological
☐	608	Blood-Borne Pathogens
☐	609	Asbestos
☒	610	Lead
☐	611	Cadmium
☐	612	Compressed Gases

4.2 HAZWOPER QUALIFICATIONS

Personnel performing work art the job site must be qualified as HAZWOPER workers (unless otherwise noted in specific THAs or by the SSO), and must meet the medical monitoring and training requirements specified in the following safety procedures:

- SH&E 108, *SH&E Medical Monitoring and Surveillance.*
- SH&E 301, *Hazardous Waste Operations (HAZWOPER)*
- SH&E 610, *Lead*

Personnel must have successfully completed training meeting the provisions established in 29 CFR 1910.120 (e)(2) and (e)(3) (40-hour initial training). As appropriate, personnel must also have completed annual refresher training in accordance with 29 CFR 1910.120 (e)(8); each person's most recent training course must have been completed within the previous 365 days. Personnel must also have completed a physical exam in accordance with the requirements of 29 CFR 1910.120 (f), where the medical evaluation includes a judgment of the employee's ability to use respiratory protective equipment and to participate in hazardous waste site activities. These requirements are further discussed in SH&E 301, *Hazardous Waste Operations*. In addition, medical monitoring requirements in accordance with 29 CFR 1910.1025 will be required for all employees working on-site.

If site monitoring procedures indicate that a possible exposure has occurred above the OSHA permissible exposure limit (PEL), employees may be required to receive supplemental medical testing to document specific to the particular materials present.

4.2.1 HAZWOPER Training Exceptions

OSHA regulations mandate specific training requirements for personnel involved in remediation processes and spill response activities. However, personnel do not require HAZWOPER certification if site characterization/monitoring indicates that the potential for health and safety concerns is minimal, or entry is only allowed into non-hazardous areas. This exception includes contractors performing field activities in/on site properties that do not involve impacted or potentially impacted materials that could cause adverse health affects (e.g., contractors performing construction tasks in or through "clean," non-impacted soils, etc.).

In addition, surveyors (or equivalent personnel) conducting non-intrusive work prior to impacted material disturbances will not be required to have HAZWOPER certification. Personnel who only visit or deliver to the work site perimeters (e.g., vendors, personnel working in the support zone, etc.) are exempt from the HAZWOPER standard, and do not require certification. Visitors (including regulators, inspectors, etc.) would not require HAZWOPER certification to observe work in progress from designated perimeter areas. To minimize confusion or a breach in site control requirements, contact the SSO or Safety Professional during task planning to determine if HAZWOPER certification will be required in specific areas.

4.2.2 Contractor Medical Surveillance

Subcontractors, upon award of specific work, must provide appropriate documentation of medical surveillance (e.g., IAW 29 CFR 1910.120(f) and 29 CFR 1910.1025) signed by an occupational physician, for all personnel that apply. This documentation must state the ability to perform the subject work and, if applicable, the ability to wear respiratory protection. This documentation must be provided at least seven days prior to work start-up. Medical certification for newly assigned employees must be provided before they begin field activities at the site. If site conditions change or scope of work expands (e.g., potential contact with impacted materials, use of respirators, etc.), the RM and/or SSO will meet with the subcontractor's health and safety representative to evaluate and determine the minimum medical surveillance requirements necessary to proceed.

Medical certificates must be made available upon request. Any subcontractor employee whose medical certification expires must be prevented, by the subcontractor, from performing work until the medical re-certification is attained.

4.2.3 Medical Surveillance Exceptions

OSHA regulations mandate specific medical surveillance requirements for personnel involved in remediation processes, material handling and spill response activities. However, personnel do not require HAZWOPER-related medical surveillance if site characterization/monitoring indicates that the potential for health and safety concerns is minimal, or entry is only allowed into non-hazardous areas. This exception includes contractors performing field activities that do not involve impacted or potentially impacted materials that could cause adverse health affects (e.g., contractors performing construction tasks in or through "clean," non-impacted soils, etc.).

Note: Contractors will still be required to complete and document any applicable non-HAZWOPER medical surveillance (i.e., hearing conservation testing, etc.).

4.3 SAFETY TRAINING

The following SH&E SOPs contain specific training requirements applicable to all operations:

1. SH&E 109, *Hearing Conservation*
2. SH&E 112, *Respiratory Protection*
3. SH&E 113, *Personal Protective Equipment*
4. SH&E 114, *Safety Training Programs*
5. SH&E 115, *Hazard Communication Program*
6. SH&E 116, *Driver and Vehicle Safety*

7. SH&E 117, *Commercial Vehicle Program*
8. SH&E 202, *Safety Meetings*
9. SH&E 204, *Task Hazard Analyses*
10. SH&E 204, *Emergency Action Planning and Prevention*
11. SH&E 601, *Hazardous Materials Shipping*
12. SH&E 604, *Decontamination*
13. SH&E 610, *Lead*

For this project, the training required to perform work includes:

1. HAZWOPER 40-hour and current 8-hour refresher,
2. 8-hour Supervisor (at least one person on site),
3. 10-Hour OSHA Construction Safety
4. Hearing Conservation,
5. Respiratory Protection,
6. Site-Specific training/orientation (See Below),
7. First Aid/CPR training (at least one person on site)

The SSO (or designee) will confirm that all appropriate training requirements have been achieved and maintained appropriately. Refer to Section 4.3.1 below for site specific training requirements.

4.3.1 Site-Specific Training/Orientation

In addition to the general health and safety training programs, personnel will be provided with a site-safety orientation to include:

1. HASP: Instructed on the contents of applicable portions of this HASP and THAs developed for the tasks to be performed.
2. Hazard Communication: Informed about the potential routes of exposure, protective clothing, precautionary measures, and symptoms or signs of chemical exposure and heat stress.
3. Hazards and Recognition: Made aware of task-specific physical, chemical, biological hazards and other hazards that may be encountered during site work. This includes any potential confined space and lockout/tagout procedures.
4. Air Monitoring: Made aware of air monitoring requirements, including where to locate action levels.
5. Emergency Response Plan: Made aware of emergency response procedures.

The orientation will be documented by the signing-off of the HASP once all of the above topics have been reviewed by the employee and RM.

4.3.2 Competent-Person Training Requirements

In order to complete the planned scope of work, an OSHA-designated competent person must be onsite to perform the required daily inspections of equipment and/or operations. The competent person may be an AECOM or subcontractor employee. The designated competent person(s) for this project are shown in Table 4-2:

Table 4-2: Task-Specific Competent Persons

Employee Name	Organization	Area of Competency
Carl Duffey	AECOM	Heavy Equipment (SH&E 513)

Note: The training requirements for competent persons are specified in the indicated SOPs and/or SH&E 132, *Competent Person Designation*. By identifying an employee as a "competent person", that person has now been authorized to take prompt corrective measures to eliminate hazards.

4.4 HAZARD COMMUNICATION

Section 5.2 provides information concerning the materials that may be encountered as environmental contaminants during the work activities. In addition, any organization wishing to bring any hazardous material onto any AECOM-controlled work site must first provide a copy of the item's Material Safety Data Sheet (MSDS) to the SSO for approval and filing (the SSO will maintain copies of all MSDSs on site). MSDSs may not be available for locally-obtained products, in which case some alternate form of product hazard documentation will be acceptable. In accordance with the requirements of SH&E 115, *Hazard Communication Program*, all personnel shall be briefed on the hazards of any chemical product they use, and shall be aware of and have access to all MSDSs.

All containers on site shall be properly labeled to indicate their contents. Labeling on any containers not intended for single-day, individual use shall contain additional information indicating potential health and safety hazards (flammability, reactivity, etc.).

Attachment B provides copies of MSDSs for those items planned to be brought on site at the time this HASP is prepared. This information will be updated as required during site operations.

4.5 CONFINED SPACE ENTRY

Confined space entry is not anticipated for this site. If confined spaces are identified, the SSO/site supervisor will inform all employees of the location of confined spaces and prevent unauthorized entry. Confined space entry procedures and training requirements are listed in SH&E 118.

4.6 HAZARDOUS, SOLID, OR MUNICIPAL WASTE

If hazardous, solid and/or municipal wastes are generated during any phase of the project, the waste shall be accumulated, labeled, and disposed of in accordance with applicable Federal, State, and/or local regulations.

4.7 GENERAL SAFETY RULES

All site personnel shall adhere to SH&E 201, *General Safety Rules*, during site operations. In addition, the housekeeping and personal hygiene requirements listed below will also be observed.

4.7.1 Housekeeping

During site activities, work areas will be continuously policed for identification of excess trash and unnecessary debris. Excess debris and trash will be collected and stored in an appropriate container (e.g., plastic trash bags, garbage can, roll-off bin) prior to disposal. At no time will debris or trash be intermingled with waste PPE or contaminated materials.

4.7.2 Smoking, Eating, or Drinking

Smoking, eating and drinking will not be permitted inside any controlled work area at any time. Field workers will first wash hands and face immediately after leaving controlled work areas (and always prior to eating or drinking). Consumption of alcoholic beverages is prohibited at any AECOM site.

4.7.3 Personal Hygiene

The following personal hygiene requirements will be observed:

Water Supply: A water supply meefing the following requirements will be utilized:

Potable Water - An adequate supply of potable water will be available for field personnel consumption. Potable water can be provided in the form of water bottles, canteens, water coolers, or drinking fountains. Where drinking fountains are not available, individual-use cups will be provided as well as adequate disposal containers. Potable water containers will be properly identified in order to distinguish them from non-potable water sources.

Non-Potable Water - Non-potable water may be used for hand washing and cleaning activities. Non-potable water will not be used for drinking purposes. All containers of non-potable water will be marked with a label stating:

Non-Potable Water
Not Intended for Drinking Water Consumption

Toilet Facilities: A minimum of one toilet will be provided for every 20 personnel on site, with separate toilets maintained for each sex except where there are less than 5 total personnel on site. For mobile crews where work activities and locations permit transportation to nearby toilet facilities on-site facilities are not required.

Washing Facilities: Employees will be provided washing facilities at each work location. The use of water and hand soap (or similar substance, such as wipes) will required by all employees following exit from the Exclusion Zone, prior to breaks, and at the end of daily work activities.

4.7.4 Buddy System

All field personnel will use the buddy system when working within any controlled work area. Personnel belonging to another organization on site can serve as "buddies" for AECOM personnel. Under no circumstances will any employee be present alone in a controlled work area.

4.7.5 Heat and Cold Stress

Heat and cold stress may vary based upon work activities, PPE/clothing selection, geographical locations, and weather conditions. To reduce the potential of developing heat/cold stress, be aware of the signs and symptoms of heat/cold stress and watch fellow employees for signs of heat/cold stress. For additional requirements, refer to SH&E 124, *Heat Stress*, and SH&E 125, *Cold Stress*.

4.7.5.1 Solar Protection

To protect against exposure to solar radiation, workers will observe the following requirements:

1. All workers will wear sunglass-type safety glasses (Z87.1 approved) at all times when working outdoors during daylight hours.
2. Workers will utilize a commercial sunblock with a minimum solar protection factor (SPF) of 15.

4.8 STOP WORK AUTHORITY

All employees have the right and duty to stop work when conditions are unsafe, and to assist in correcting these conditions. Whenever the SSO determines that workplace conditions present an uncontrolled risk of injury or illness to employees, immediate resolution with the appropriate supervisor shall be sought. Should the supervisor be unable or unwilling to correct the unsafe conditions, the SSO is authorized and required to stop work, which shall be immediately binding on all affected AECOM employees and subcontractors.

Upon issuing the stop work order, the SSO shall implement corrective actions so that operations may be safely resumed. Resumption of safe operations is the primary objective; however, operations shall not resume until the Safety Professional has concurred that workplace conditions meet acceptable safety standards.

4.9 USE OF UTILITY KNIVES OR OTHER OPEN-BLADED CUTTING TOOLS

All utility knives with manually retracting blades (including "pocket knives" and other "collapsible, open-blade cutting tools") are no longer permitted on any AECOM jobsite, unless specifically authorized on a task-specific

basis in this HASP and associated THA/JSA. The only acceptable type of utility knife will be those with automatically retracting blades. Other "cutters" must be equipped with a completely enclosed and guarded blade. Additional recommendations regarding the use of cutting tools can be found in SH&E 610, *Hand and Power Tools*.

4.10 CLIENT SPECIFIC SAFETY REQUIREMENTS

The client has specified no additional health and safety requirements.

5.0 HAZARD ASSESSMENT

5.1 TASK HAZARD ANALYSIS

Task hazard analysis (THA) is a technique used to identify hazards and hazard controls associated with a specific job function. THAs focus on the relationship between the workers, the task, the resources required to complete the task, and the work environment. These variables must be evaluated to identify the potential hazards associated with the task. Once identified, steps can be taken to eliminate, reduce, or control the hazards to an acceptable risk level.

Section 2.2 lists the work activities anticipated during this project. Individual THAs for the tasks associated with this work can be found in Attachment A. Refer to SH&E 204, *Task Hazard Analyses* for additional THA requirements.

5.1.1 Unanticipated Work Activities/Conditions

Operations at the site may require additional tasks not identified in Section 2.2 or addressed in Attachment A, THAs. Before performing any task not covered in this HASP a THA must be prepared, and approved by the Safety Professional.

5.2 ENVIRONMENTAL CONTAMINANT EXPOSURE HAZARDS

The following is a discussion of the hazards presented to worker personnel during this project from on-site chemical and radiological hazards known or suspected to be present on site. Hazards associated with chemical products brought to the site during work operations are addressed separately, under the Hazard Communication process described in Section 4.3.

Exposure symptoms and applicable first aid information for each suspected site contaminant listed in Section 2 are located in the following subsections. Additional data is provided in Chemical Safety Cards, located in Attachment C.

5.2.1 Lead

Lead adversely affects numerous body systems and causes forms of health impairment and disease that arise after periods of exposure as short as days (acute exposure) or as long as several years (chronic exposure). The frequency and severity of medical symptoms increases with the concentration of lead in the blood. Common symptoms of acute lead poisoning are loss of appetite, nausea, vomiting, stomach cramps, constipation, difficulty in sleeping, fatique, moodiness, headache, joint or muscle aches, anemia, and decreased sexual drive. Acute health poisoning from uncontrolled occupational exposures has resulted in fatalities. Long term (chronic) overexposure to lead may result in severe damage to the blood-forming, nervous, urinary, and reproductive systems.

5.2.2 Arsenic

Arsenic occurs naturally in the environment as an element of the earth's cmst. Arsenic is combined with other elements such as oxygen, chlorine, and sulfur to form inorganic arsenic compounds. Exposure to higher-than-average levels of arsenic occurs mainly in workplaces, near or in hazardous waste sites, and areas with high levels naturally occurring in soil, rocks, and water. Exposure to high levels of arsenic can cause death. Exposure to arsenic at low levels for extended periods of time can cause a discoloration of the skin and the appearance of small coms or warts. Arsenic exposure in the workplace occurs through inhalation, ingestion, dermal or eye contact. Chronic exposure to arsenic can lead to dermatitis, mild pigmentation keratosis of the skin, vasospasticity, gross pigmentation with hyperkeratinization of exposed areas, wart formation, decreased nerve conduction velocity, and lung cancer. Acute exposures can cause lung distress and death.

5.2.3 Assessment of Exposure Hazards

Inhalation – The inhalation risk associated with the task described in the SOW (fence installation and posting signage) is anticipated to be minimal. Continual monitoring with the PDR as described in Section 6.2 and staying below the action levels will minimize the potential exposure.

into contact with water bodies. Contact with microorganisms in water may result in dermatitis, infection (i.e., in cuts/lacerations), digestive distress, and other diseases. Always be aware of areas that may contain excessive amounts of microorganisms. Such areas may include areas of standing water; areas of warm water (i.e., cooling tower effluents, etc.); and areas downstream of municipal wastewater treatment. To prevent exposure to microorganisms in water, always adhere to the following:

  - Wear protective gloves (i.e., nitrile, etc.) and other appropriate PPE to prevent skin contact with water.
  - Never drink from natural or artificial bodies of water. Such water is considered non-potable and is not safe for drinking.

- Wild animals, such as snakes, raccoons, squirrels, and rats. These animals not only can bite and scratch, but can carry transmittable diseases (e.g., rabies). Avoid the animals whenever possible. If bitten, go to the nearest medical facility.
- Insects such as mosquitoes, ticks, bees, and wasps. Mosquitoes can potentially carry and transmit the West Nile Virus. Ticks can transmit Lyme disease or Rocky Mountain Spotted Fever. Bees and wasps can sting by injecting venom, which causes some individuals to experience anaphylactic shock (extreme allergic reaction). Whenever you will enter areas that provide a habitat for insects (e.g., grass areas, woods), wear light-colored clothing, long pants and shirt, and spray exposed skin areas with a DEET-containing repellent. Keep away from high grass wherever possible. Keep your eyes and ears open for bee and wasp nests. If bitten by insects, see a doctor if there is any question of an allergic reaction.
- Plants such as poison ivy and poison oak can cause severe rashes on exposed skin. Be careful where you walk, wear long pants, and minimize touching exposed skin with your hands after walking through thickly vegetated areas until after you have thoroughly washed your hands with soap and water.

Skin Contact – Avoid all skin contact with contaminated materials by using tyvek suits, protective rubber booties and hand protection (nitrile gloves under, work gloves over) and follow all proper decontamination methods to avoid tracking contaminated material out of the EZ and CRZ.

Ingestion –Protection against exposure via ingestion can be accomplished by the utilization of proper hand and dermal contact protection and performance of proper decontamination procedures when exiting contaminated work areas (see Section 8.2).

5.3 PHYSICAL HAZARDS

The following physical hazards may be encountered during operations at the Raritan Bay Slag Pile site:

- Vehicle strike hazards (heavy equipment operations, haul vehicles)
- Falling object hazards
- Manual lifting
- Operation of powered hand tools
- Manual hand tools
- Heavy Equipment Operations
- Pinch and crushing hazards
- Slip, trip, and fall hazards
- Hazardous noise exposure
- Chemical exposure (HAZCOM)
- Cuts, scraps, and lacerations
- Overhead / underground utilities
- Overhead/underground utilities
- Heat/cold stress
- Marine Operations
- Heavy lifting (49 lb. rule)
- Severe weather

5.4 BIOLOGICAL HAZARDS

Biological hazards present a unique obstacle to personnel performing operations involving bio-hazardous materials or working in environments that contain biological hazards. Protection must be identified and provided when biological hazards are anticipated. Specific SH&E requirements can be found in the following SOPs:

1. SH&E 201, *General Safety Requirements*
2. SH&E 419, *Clean Up of Bird Excrement and Amplified Fungal Growth*
3. SH&E 607, *Biohazards*
4. SH&E 608, *Blood-borne Pathogens*

Contact with bodies of water, animals, insects, and plants can cause injury and illness to personnel. Care must be taken to ensure that these types of injuries are avoided. Some examples of biological hazards include:

- Natural and artificial bodies of water (e.g., lakes, rivers, ponds, lagoons, etc.) may contain a variety of microorganisms. Microorganisms, in particular, present a significant hazard to personnel who may come

6.0 ACTIVITY SPECIFIC REQUIREMENTS

6.1 SUPPLEMENTAL SAFETY PROCEDURES

As discussed in Section 5.0, personnel may be exposed to a variety of chemical, physical, and biological hazards. The requirements for the control of many of these hazards these hazards is discussed in SH&E SOP Manual. Specifically, the 300, 400, 500, and 600 series of the SH&E SOP Manual provide specific information regarding hazard control and the requirements necessary to complete tasks in a safe manner.

6.1.1 Utilities

Various forms of underground/overhead utility lines or pipes may be encountered during site activities. Prior to the start of intrusive operations, utility clearance is mandated, as well as obtaining authorization from all concerned public utility department offices. Should intmsive operations cause equipment to come into contact with utility lines, the SSO and an AECOM SH&E Professional will be notified immediately. Work will be suspended until the applicable utility agency is contacted and the appropriate actions for the particular situations can be taken. For this site, the applicable agency is NJ One Call System. The phone number is provided in the Emergency Contacts list found in Section 8. For additional requirements, refer to SH&E 402, *Excavation & Trenching*; SH&E 403, *Drilling*; and SH&E 310, *Overhead Electrical Lines*.

6.1.2 Manual Lifting

Most materials associated with investigation and remedial activities are moved by hand. The human body is subject to severe damage in the forms of back injury, muscle strains, and hemia if caution is not observed in the handling process. Whenever possible, use at least two people to lift, or roll/lift with your arms as close to the body as possible. Under no circumstances should any one person lift more than 49 pounds unassisted. For additional requirements, refer to SH&E 404, *Manual Materials Handling*.

6.1.3 Heavy Equipment and Vehicle Operations

Heavy equipment and site vehicles present serious hazards site personnel. Blind spots, failure to yield, and other situations may cause heavy equipment/vehicles to come into contact with personnel. To reduce the possibility of contact between equipment/traffic and personnel, always adhere to the following:

- Personnel must wear a high visibility, reflective safety vest at all times when working near heavy equipment and/or other vehicle traffic.
- Personnel must always yield to equipment/vehicle traffic and stay at least 100 feet away from all equipment/vehicle traffic. Always maintain eye contact with operators.
- When feasible, place barriers between work areas and equipment/vehicle traffic.
- Always ensure reverse waming alarms are working and louder than surrounding noise. Personnel must report inoperative reverse waming alarms.

For additional requirements, refer to SH&E 513, *Heavy Earth Working Equipment*.

6.1.4 Slips, Trips, Falls, and Protruding Objects

A variety of conditions may exist that may result in injury from slips, trips, falls, and protruding objects. Slips and trips may occur as a result of wet, slippery, or uneven walking surfaces. To prevent injuries from slips and trips, always keep work areas clean; keep walkways free of objects and debris; and report/clean up liquid spills. Serious injuries may occur as a result of falls from elevated heights. Always wear fall protection while working at heights of 6 feet or greater above the next lower level. Protruding objects are any object that extends into the path of travel or working area that may cause injury when contacted by personnel. Always be aware of protruding objects and when feasible remove or label the protmding object with an appropriate waming.

6.1.5 Electrical and Powered Equipment

Electrical and powered equipment may be used during a variety of site activities. Injuries associated with electrical and powered equipment include electric shock, cuts/lacerations, eye damage (from flying debris), and

burns. To reduce the potential of injury from the hazards associated with electrical and powered equipment, always comply with the following:

- Wear ANSI-approved (Z87.1) safety glasses. Faceshields may be required to provide additional face protection from flying debris.
- Wear appropriate work gloves. Work gloves may reduce the severity of burns and cuts/lacerations.
- Use ground fault circuit interrupters (GFCIs) when using electrical powered tools/equipment. GFCIs prevent electrical shock by detecting the loss of electricity from a power cord and/or electrical device.
- Use lockout/tagout procedures when performing maintenance or repairs on equipment.

6.1.6 Noise

Working around large equipment often creates excessive noise. The effects of noise can include physical damage to the ear, pain, and temporary and/or permanent hearing loss. Workers can also be startled, annoyed, or distracted by noise during critical activities.

AECOM has compiled noise monitoring data which indicates that work locations within 25 feet of operating heavy equipment (drill rigs) can result in exposure to hazardous levels of noise (levels greater than 90 dBA). Accordingly, all personnel are required to use hearing protection (ear plugs or ear muffs, minimum noise reduction rating of 25 dB) within 25 feet of any operating piece of heavy equipment.

Refer to SH&E 109, *Hearing Conservation Program* for requirements regarding hazardous noise and hearing protection.

6.1.7 Excavations and Trenches

Excavations and trenches present workers with a variety of hazards. If not properly sloped, shored, or boxed, trench walls may collapse and trap workers under the weight of the soil. Soil contaminants and other chemical hazards (e.g., carbon monoxide from equipment/vehicles) may result in a hazardous atmosphere. Confined space entry procedures may need to be followed if the potential for a hazardous atmosphere exists. Buried utilities may exist where excavations/trenches will be placed. Always contact the local utility locator service prior to beginning excavations. Refer to SH&E 402, *Excavation & Trenching* for additional requirements.

6.1.8 Spill Prevention

Work activities may involve the use of hazardous materials (i.e. fuels, solvents) or work involving drums or other containers. The following procedures will be used to prevent or contain spills:

- All hazardous material will be stored in appropriate containers
- Tops/lids will be placed back on containers after use.
- Containers of hazardous materials will be stored appropriately away from moving equipment.

At least one spill response kit, to include an appropriate empty container, materials to allow for booming or diking the area to minimize the size of the spill, and appropriate clean-up material (i.e. speedy dri) shall be available at each work site (more as needed).

- All hazardous commodities in use (i.e. fuels) shall be properly labeled.
- Containers shall only be lifted using equipment specifically manufactured for that purpose.
- For drums/containers, follow the procedures in SH&E 405, *Handling of Drums and Large Containers*, to minimize spillage.

6.1.9 Marine Operations – Working On/Near Water

Employees working over or near the water (within 6-ft of edge) must properly don a Coast Guard approved personal floation device (PFD). A ring buoy with at least 90-feet of line and a life-saving skiff must be available for emergency rescue operations. The distance between the ring buoy's must not exceed 200-feet. All work on or near the water must incorporate the "Buddy System" (min 2 person). Refer to SH&E 309, *Marine Operations- Working On/Near Water*, for more specific information.

6.2 EXPOSURE MONITORING PROCEDURES

Monitoring procedures will be employed during site characterization activities to assess employee exposure to chemical and physical hazards. Monitoring will consist primarily of onsite determination of various parameters (e.g., airborne contaminant concentrations and heat stress effects), but may be supplemented by more sophisticated monitoring techniques, if necessary. Refer to SH&E 111, *Employee Exposure Monitoring* and SH&E 301, *Hazardous Waste Operations* for additional requirements.

6.2.1 Real-Time Exposure Measurement

Monitoring shall be performed within the work area on site in order to detect the presence and relative levels of toxic substances. The data collected throughout monitoring shall be used to determine the appropriate levels of PPE. Monitoring shall be conducted as specified in each THA (Attachment A) as work is performed.

Table 6-1specifies the real-time monitoring equipment which will be used for this project.

Table 6-1. Monitoring Parameters and Equipment

INSTRUMENT	MANUFACTURER/MODEL*	SUBSTANCES DETECTED
Particulate Monitor	MIE PDR-1000 or equivalent	Aerosols, mist, dust, and fumes
Personal Air Monitors	Gilian – GilAir 3 or equivalent	8-hr TWA, Lead

6.2.1.1 Health and Safety Action Levels

An action level is a point at which increased protection is required due to the concentration of contaminants in the work area or other environmental conditions. The concentration level (above background level) and the ability of the PPE to protect against that specific contaminant determine each action level. The action levels are based on concentrations in the breathing zone.

If ambient levels are measured which exceed the action levels in areas accessible to unprotected personnel, necessary control measures (barricades, warning signs, and mitigative actions, etc.) must be implemented prior to commencing activities at the specific work area.

Personnel should also be able to upgrade or downgrade their level of protection with the concurrence of SSO or the Safety Professional.

Reasons to upgrade:

- Known or suspected presence of dermal hazards.
- Occurrence or likely occurrence of gas, vapor, or dust emission.
- Change in work task that will increase the exposure or potential exposure to hazardous materials.

Reasons to downgrade:

- New information indicating that the situation is less hazardous than was originally suspected.
- Change in site conditions that decrease the potential hazard.
- Change in work task that will reduce exposure to hazardous materials.

Table 6-2. Monitoring Procedures and Action Levels

PARAMETER	LOCATION AND INTERVAL	RESPONSE LEVEL (Meter units/ppm above background)	RESPONSE
Dust, Mist, Aerosols (Total by PDR)	Continually in the worker's breathing zone during intrusive activities involving impacted materials. In addition, site perimeter monitoring may be initiated by the SSO based on elevated air monitoring results.	Initial excavation or disturbance of unknown materials	Level C ensemble as listed in this HASP and per SSO and SH&E Manager.
		< 0.25 mg/m^3 (Sustained for more than 5 minutes)	Continue Level **D** work and continue monitoring.
		≥ 0.25 mg/m^3 (Sustained for more than 5 minutes)	Upgrade to Level C PPE. Contact the RM and SSO, implement mitigation measures, and continue Level C (minimum GMA/P100 cartridges or equivalent chemical cartridge combined with P100) and continue monitoring. Personnel air sampling required (see below).
		≥ 5 mg/m^3 (Sustained for more than 5 minutes)	Temporarily cease work operations, contact the RM and SH&E Manager to discuss improving site mitigation measures. Possible upgrade to Level B for exclusion zone workers.
Dust, Mist Aerosols (8-hr TWA)	Personal air samples taken in worker's breathing zone during intrusive activities involving impacted materials.	≥ 0.25 mg/m^3 Collect cassettes for analysis	Consult with SH&E Department.

6.2.1.2 Monitoring Equipment Calibration

All instruments used will be calibrated at the beginning and end of each work shift, in accordance with the manufacturer's recommendations. If the owner's manual is not available, the personnel operating the equipment will contact the applicable office representative, rental agency or manufacturer for technical guidance for proper calibration. If equipment cannot be pre-calibrated to specifications, site operations requiring monitoring for worker exposure or off-site migration of contaminants will be postponed or temporarily ceased until this requirement is completed.

6.2.1.3 Personal Sampling

The SSO, under the direction of a Certified Industrial Hygienist (CIH), will be responsible for performing the monitoring required. Within five working days after the receipt of monitoring results, the CIH will notify each employee, in writing, of the results that represent that employee's exposure. Copies of air sampling results will be maintained in the project files.

Should the site activities warrant, the subcontractor will ensure its employees' exposures are quantified via the use of appropriate sampling techniques. The subcontractor shall notify the employees sampled in accordance with health and safety regulations, and provide the results to the SSO for use in determining the potential for other employees' exposure.

6.2.2 Noise Exposure Monitoring

When heavy equipment is in operation, it will be necessary to ensure that each exclusion zone fully encompasses all areas where hazardous noise levels are present (85dBA or greater). Once each work day, the SSO will use a sound level meter to survey the perimeter of each exclusion zone, while all onsite heavy equipment within the zone is being operated simultaneously. If the sound pressure level exceeds 85 dBA at any location along the site perimeter, the SSO will exit the exclusion zone and use the meter to determine the 85 dBA limit. The exclusion zone boundary will then be adjusted to fully encompass this region.

7.0 PERSONAL PROTECTIVE EQUIPMENT

7.1 PERSONAL PROTECTIVE EQUIPMENT

The purpose of personal protective equipment (PPE) is to provide a barrier, which will shield or isolate individuals from the chemical and/or physical hazards that may be encountered during work activities. SH&E 113, *Personal Protective Equipment*, lists the general requirements for selection and usage of PPE. Table 7-1 lists the minimum PPE required during site operadons and additional PPE that may be necessary. The specific PPE requirements for each work task are specified in the individual THAs found in Attachment A.

By signing this HASP you are agreeing that you have been properly trained in the use, limitations, care and maintenance of the protective equipment you will use at this project. If you have not received training on the proper use, care, and limitations of the PPE required for this project, please see the RM/SSO for the proper training prior to signing this HASP.

Table 7-1. Personal Protective Equipment

TYPE	MATERIAL	ADDITIONAL INFORMATION
Minimum PPE:		
Safety Vest	High-visibility	Must have reflective tape and be visible from all sides
Boots	Leather	ANSI Z41 approved safety toe
Safety Glasses w/ sideshields		ANSI Z87.1 Approved
Hard Hat		ANSI Approved
Work Uniform		No shorts/cutoff jeans or sleeveless shirts
Floatation Device	USCG Type III PFD	When working over or within 6-ft of the waters edge.
Additional PPE:		
Hearing Protection	Ear plugs and/ or muffs (minimum 29 NRR)	In hazardous noise areas
Work Gloves	Leather	If working with sharp objects or powered equipment.
Protective Chemical Gloves	Inner: Nitrile Outer: Heavy Duty Nitrile, PVC, Neoprene, Viton	
Protective Chemical Coveralls	Inner: Tyvek® or equivalent Outer: Tychem SL® or equivalent	
Protective Chemical Boots	Rubber, neoprene, PVC	
Level C Respiratory Protection	MSA (Full Face or equivalent) equipped with GMA/P100	Cartridge change out schedule: At the end of each work shift.

7.2 DECONTAMINATION

All requirements for performing personal and equipment decontamination may be found in SH&E 604, *Decontamination*.

7.2.1 PPE Doffing and Donning Information

The following information is to provide field personnel with helpful hints that, when applied, make donning and doffing of PPE a more safe and manageable task:

- Never cut disposable boofies from your feet with basic utility knives. This has resulted in workers cutting through the booty and the underlying sturdy leather work boot, resulting in significant cuts to the legs/ankles. Recommend using a pair of scissors or a package/letter opener (cut above and parallel with the work boot) to start a cut in the edge of the booty, then proceed by manually tearing the material down to the sole of the booty for easy removal.
- When applying duct tape to PPE interfaces (wrist, lower leg, around respirator, etc.) and zippers, leave approximately one inch at the end of the tape to fold over onto itself. This will make it much easier to remove the tape by providing a small handle to grab while still wearing gloves. Without this fold, trying to pull up the tape end with multiple gloves on may be difficult and result in premature tearing of the PPE.
- Have a "buddy" check your ensemble to ensure proper donning before entering controlled work areas. Without mirrors, the most obvious discrepancies can go unnoticed and may result in a potential exposure situation.
- Never perform personal decontamination with a pressure washer.

7.2.2 Disposal of PPE & Decontamination Materials

All PPE and decontamination materials (i.e., rinsate, tubs, brushes, etc.) must be disposed of in accordance with federal, state, and local regulations. Contaminated PPE and decontamination materials may need to be disposed of as hazardous waste based on the types and degree of contamination.

8.0 SITE CONTROL

8.1 GENERAL

The purpose of site control is to minimize potential contamination of workers, protect the public from site hazards, and prevent vandalism. The degree of site control necessary depends on the site characteristics, site size, and the surrounding community.

Controlled work areas will be established at each work location, and if required, will be established directly prior to the work being conducted. Diagrams designating specific controlled work areas will be drawn on site maps, posted in the support vehicle or trailer and discussed during the daily safety meetings. If the site layout changes, the new areas and their potential hazards will be discussed immediately after the changes are made. A general example of a zone layout has been developed for site activities and is attached to this section.

8.2 CONTROLLED WORK AREAS

Each HAZWOPER controlled work area will consist of the following three zones:

- Exclusion Zone: Contaminated work area.
- Contamination Reduction Zone: Decontamination area.
- Support Zone: Uncontaminated or "clean area" where personnel should not be exposed to hazardous conditions.

Each zone will be periodically monitored in accordance with the air monitoring requirements established in this HASP. The Exclusion Zone and the Contamination Reduction Zone are considered work areas. The Support Zone is accessible to the public (e.g., vendors, inspectors).

8.2.1 Exclusion Zone

The Exclusion Zone is the area where primary activities occur, such as sampling, remediation operations, installation of wells, cleanup work, etc. This area must be clearly marked with hazard tape, barricades or cones, or enclosed by fences or ropes. Only personnel involved in work activities, and meeting the requirements specified in the applicable THA and Sections 4.1 and 4.2, will be allowed in an Exclusion Zone.

The extent of each area will be sufficient to ensure that personnel located at/beyond its boundaries will not be affected in any substantial way by hazards associated with sample collection activities. To meet this requirement, the following minimum distances will be used:

- Fence Installation. A distance of 25 feet will be cleared in all directions from the equipment and the location where the displaced soil is deposited. The cleared area will be sufficient to accommodate movement of necessary equipment and the stockpiling of spoils piles.

All personnel should be alert to prevent unauthorized, accidental entrance into controlled-access areas (the Exclusion Zone and CRZ). If such an entry should occur, the trespasser should be immediately escorted outside the area, or all HAZWOPER-related work must cease. All personnel, equipment, and supplies that enter controlled-access areas must be decontaminated or containerized as waste prior to leaving (through the CRZ only).

8.2.2 Contamination Reduction Zone

The Contamination Reduction Zone is the transition area between the contaminated area and the clean area. Decontamination is the main focus in this area. The decontamination of workers and equipment limits the physical transfer of hazardous substances into the clean area. This area must also be clearly marked with hazard tape and access limited to personnel involved in decontamination. Decontamination procedures are further explained in SH&E 604.

8.2.3 Support Zone

The Support Zone is an uncontaminated zone where administrative and other support functions, such as first aid, equipment supply, emergency information, etc., are located. The Support Zone shall have minimal potential for significant exposure to contaminants (i.e., background levels).

Employees will establish a Support Zone (if necessary) at the site before the commencement of site activities. The Support Zone would also serve as the entry point for controlling site access.

8.3 SITE ACCESS DOCUMENTATION

All personnel entering the site shall complete the "Site Entry/Exit Log" located at the Command Post.

If implemented by the RM, all personnel required to enter established site control zones shall complete the Exclusion and/or "Hot Zone" Log located at the decontamination area.

8.3.1 Visitor Access

Visitors to any HAZWOPER controlled-work area must comply with the health and safety requirements of this HASP, and demonstrate an acceptable need for entry into the work area. All visitors desiring to enter any controlled work area must observe the following procedures:

1. A written confirmation must be received by AECOM documenting that each of the visitors has received the proper training and medical monitoring required by this HASP. Verbal confirmation can be considered acceptable provided such confirmation is made by an officer or other authorized representative of the visitor's organization.
2. Each visitor will be briefed on the hazards associated with the site activities being performed and acknowledge receipt of this briefing by signing the appropriate tailgate safety briefing form.
3. All visitors must be escorted by the RM or designee.

If the site visitor requires entry to any Exclusion Zone, but does not comply with the above requirements, all work activities within the Exclusion Zone must be suspended. Until these requirements have been met, entry will not be permitted.

8.4 SITE SECURITY

Site security is necessary to:

- Prevent the exposure of unauthorized, unprotected people to site hazards.
- Avoid the increased hazards from vandals or persons seeking to abandon other wastes on the site.
- Prevent theft.
- Avoid interference with safe working procedures.

To maintain site security during working hours:

1. Maintain security in the Support Zone and at access control points.
2. Establish an identification system to identify authorized persons and limitations to their approved activities.
3. Assign responsibility for enforcing authority for entry and exit requirements.
4. When feasible, install fencing or other physical barrier around the site.
5. If the site is not fenced, post signs around the perimeter and whenever possible, use guards to patrol the perimeter. Guards must be fully apprised of the hazards involved and trained in emergency procedures.
6. Have the RM approve all visitors to the site. Make sure they have valid purpose for entering the site. Have trained site personnel accompany visitors at all times and provide them with the appropriate protective equipment.

To maintain site security during off-duty hours:

1. If possible, assign trained, in-house technicians for site surveillance. They will be familiar with the site, the nature of the work, the site's hazards, and respiratory protection techniques.
2. If necessary, use security guards to patrol the site boundary. Such personnel may be less expensive than trained technicians, but will be more difficult to train in safety procedures and will be less confident in reacting to problems around hazardous substances.
3. Enlist public enforcement agencies, such as the local police department, if the site presents a significant risk to local health and safety.
4. Secure the equipment.

Figure 8-1. Site Control Layout

9.0 EMERGENCY RESPONSE PROCEDURES

Emergencies are uncontrolled circumstances that can result in damage to personnel or property. Emergencies can be a result of the work process (e.g., hazardous material spills), or environmental conditions, such as severe weather. Once identified, response to emergencies typically occurs in three stages: communication, evacuation, and mitigation (response or control method). In addition, the emergency response procedures will vary with each situation. Table 9-2 at the end of this plan serves as a guideline for responding to emergencies at the Raritan Bay Slag Pile site.

9.1 COMMUNICATION PROCEDURES

Communication procedures consist of the verbal, audio, and visual methods of notifying the appropriate personnel of an emergency, as well as the necessary protocols for notification. The communication of an emergency consists of three (3) phases:

1. Initial communication:
   The individual(s) who identify an emergency must immediately notify the Emergency Coordinator (EC). If necessary, the individual(s) may contact emergency services (e.g., 911) and/or order an evacuation of the work area prior to contacting the EC.
2. Evacuation:
   If necessary, the EC will notify all personnel to evacuate the work area and proceed to the appropriate muster location(s). Additional notifications will be made to subcontractors, other employers, the client, and public if necessary. See Section 1.2 below.
3. Mitigation/Control Measures:
   The EC will communicate any necessary measures to control or reduce the potential impact of the emergency to employees or emergency units. See Section 1.3 below.

Prior to performing any site activities, emergency communication and alarm methods must be developed (see Table 9-2) and communicated to ensure all site personnel are knowledgeable of protocol. When developing the alarm methods, consideration must also be given as to how the employees who hear/see the alarm will respond. For example, some alarms consist of a long, steady whistle to signify a fire, whereas two short alarm bursts, followed by a pause, followed by two short bursts, can signify that equipment shall be shut down and all personnel shall immediately proceed to the muster location(s).

In addition, personnel must be able to contact the EC and/or outside emergency units as needed. Therefore, mobile communication systems (e.g., radio, cell phone, horn, etc.) must be available to employees in the work zone. Emergency numbers are listed in Table 9-1 and must be posted at all exits of the site/project office and in all site vehicles.

AECOM Corporate Incident Reporting Procedures

All accidents and incidents that occur on-site during any field activity will be promptly reported to the SSO and the immediate supervisor in accordance with SH&E 201, *Incident Reporting*.

If any AECOM employee is injured and requires medical treatment, the Site Supervisor will contact the Regional Safety Manager, AECOM's Incident Reporting Line at (800) 348-5046, and the applicable Account Manager immediately. The Site Supervisor will initiate a written report, using the ***Supervisor's Report of Incident*** form (see SH&E 201). The Site Supervisor will complete the first two sections of this form and forward to the PM for completion of Section 3. The report will then be provided to the SH&E Professional before the end of the following shift.

If any employee of a subcontractor is injured, documentation of the incident will be accomplished in accordance with the subcontractor's procedures; however, copies of all documentation (which at a minimum must include the OSHA Form 301 or equivalent) must be provided to the SSO within 24 hours after the accident has occurred.

All accidents/incidents will be investigated in accordance with SH&E 204, *Incident Investigation*. Copies of all subcontractor accident investigations, whether accomplished in accordance with their own procedures or SH&E 204, will be provided to the SSO within five (5) days of the accident/incident.

9.2 EVACUATION PROCEDURES

Evacuation of the work zone and other areas will be required if it is determined that an emergency may result in injury or illness to personnel. Specific examples include large fire/explosion, chemical spill or release, severe weather event, and security threats. The EC will determine if an evacuation is necessary based on the severity of the emergency. However, any person may order an evacuation or sound an evacuation alarm to protect the safety of site personnel.

Upon the issuance of an evacuation order or alarm, personnel must evacuate the work zone and proceed directly to the appropriate muster location(s). Muster locations must be of sufficient distance from the emergency location and/or of sufficient stmcture and stability to protect personnel from the hazards.

Prior to beginning site operations, the EC will identify the appropriate emergency routes and muster locations in Table 9-2. If necessary, the EC may develop evacuation routes and muster locations for various buildings or sections of the site. In addition, the EC may and is encouraged to use site specific maps to identify the appropriate evacuation routes and muster locations. Emergency routes must be posted in the appropriate work areas and communicated to personnel.

In the event that an evacuation is ordered, the following general requirements apply:

- Work activities will cease and all personnel will be evacuated from the work location. The evacuation will proceed in a direction opposite the critically affected area, with all personnel assembling in a pre-designated location outside of the site.
- A headcount will be taken of the assembled employees by the EC.
- In the event that outside response agencies must respond, an individual will be identified to meet emergency responders at the site entrance or pre-determined location.

9.3 MITIGATION & CONTROL MEASURES

The implementation of mitigation and control measures are designed to reduce and/or eliminate the potential effects of emergencies. Known control measures for emergencies will be listed in Table 9-2.

9.4 RESPONSIBILITIES & TRAINING

9.4.1 Emergency Coordinator

The RM will assume the duties of the emergency coordinator (EC). In addition, the RM will select a competent person to act as the altemate EC. The duties of the EC and the altemate EC have been specified in SH&E 205 and are listed below:

- Responsible for the completing the emergency information (e.g., signals, muster points, etc.) located in Table 9-2 *Emergency Procedures* prior to beginning site activities and updating as needed. Table 9-2 must be posted in prominent locations on site.
- Responsible for directing all actions in emergency situations, until relieved by outside emergency response units (i.e., Fire Department).
- Responsible for ensuring all AECOM employees on site are trained in the provisions of this plan, and the required actions.
- Designates specific communication procedures to ensure that all personnel are alerted to potential emergency conditions, and what actions are required.
- Continually reviews this plan to ensure that identified hazards and actions are adequate for the office and/or facility.

- Designates personnel to perform specific duties during emergencies, such as taking muster, and directing emergency responders to the site(s).
- Responsible for ensuring that other contractors at the office are notified as to the potential emergencies associated with AECOM work, and that the contractors provide information as to potential emergencies associated with their work processes. Also, ensures that the contractor's hazards and emergency warning systems are communicated to AECOM employees.
- Ensures that all hazard signs (e.g., exit signs) and floor plans are posted as required. Ensures that emergency exit doors are not blocked, are labeled, and are not locked at any time.
- Establishes criteria and scheduling of emergency drills for AECOM employees. Critiques the drill results, and works with the supervisors to correct any observed deficiencies.
- Ensures that new employees are trained on the provisions of this plan prior to entering the work site. Ensures that visitors are either trained on the provisions of this plan, or are continually escorted by a trained employee.

9.4.2 Site Personnel

- Ensure compliance with all provisions of this plan.
- Alert the Emergency Coordinator/Supervisor to any observed conditions that can create an emergency situation.
- Notify the Emergency Coordinator/Supervisor of any change in work conditions that may impact the identified hazards in this plan.
- Do not block emergency exits or accesses.
- Participate in drills that are conducted to ensure the adequacy of the plan.

9.4.3 Subcontractors, Visitors, and Client Personnel

Subcontractors, visitors, and client personnel will follow the emergency action plans of their respective employers for the operations being performed.

Table 9-1. Emergency Contacts

Emergency Coordinators / Key Personnel			
Name	Title/Workstation	Telephone Number	Cellular Phone
Andrews Confortini	On-Scene Coordinator	732-321-6660	
Rob Flowers	Program Manager	804-515-8559	804-357-8122
Gary Woods	RM/SSO/EC	770-990-1400	302-275-6599
Sean Liddy	Safety Professional	410-637-1606	410-869-6164
Brett Hodgson	District Safety Manager	616-940-4444	616-446-6910
Herold Hannah	Regional Safety Manager	412-904-3606	412-303-1199
Incident Reporting	**Incident Reporting Line**	(800) 348-5046	

Organization / Agency	
Name	Telephone Number
Police Department (Sayreville Police)	**911** or (732) 525-5459
Fire Department (Sayreville Borough)	**911** or (732) 390-2938
State Police (NJ) Troop C	**911** or (609)584-5000
Ambulance Service ***(EMT will determine appropriate hospital for treatment)***	911 or
Poison Control Center	800-222-1222
Pollution Emergency	800-292-4706
National Response Center	800-424-8802
Chem-Trec	800-424-9300
Title 3 Hotline	800-424-9346

Hospital/Work Care	
Hospital Location ***(Use by site personnel is only for non-emergency cases)***	
Robert Wood Johnson Hospital	732-828-3000
1 Robert Wood Johnson Place, New Brunswick, NJ 08901	
Hospital Route: See map on the following page(s) for route information	
Work Care Location	
135 Raritan Center Parkway	732-225-5454
Edison, New Jersey	
Work Care Route Map: See map on the following page(s) for route information	

Public Utilities	
Name	Telephone Number
Nation-wide Utility Locator New Jersey One Call	811 732-394-3000/ (800) 272-1000

Figure 9-1. Hospital Route/Detail Map(s)

Total Time: 17 minutesTotal Distance: 8.24 miles
A: Sayreville, NJ

1:	Start out going EAST on BUCHANAN ST toward MAIN ST/CR-670.	0.0 mi
2:	Turn RIGHT onto MAIN ST/CR-670.	0.2 mi
3:	Turn RIGHT onto WASHINGTON RD/CR-535. Continue to follow CR-535.	2.0 mi
4:	Turn SLIGHT RIGHT onto HILLSIDE AVE/CR-606. Continue to follow CR-606.	0.2 mi
5:	Merge onto NJ-18 N toward NEW BRUNSWICK/NEW JERSEY TURNPIKE.	5.0 mi
6:	Take the RT-27 S ramp toward PRINCETON.	0.1 mi
7:	Turn SLIGHT RIGHT onto NJ-27 S/ALBANY ST/CR-514 W.	0.4 mi
8:	Turn RIGHT onto CR-527/EASTON AVE.	0.1 mi
9:	Turn LEFT onto SOMERSET ST.	0.2 mi
END	10: End at 1 Robert Wood Johnson Pl New Brunswick, NJ 08901-1928	

B: 1 Robert Wood Johnson Pl, New Brunswick, NJ 08901-1928
Total Time: 17 minutesTotal Distance: 8.24 miles

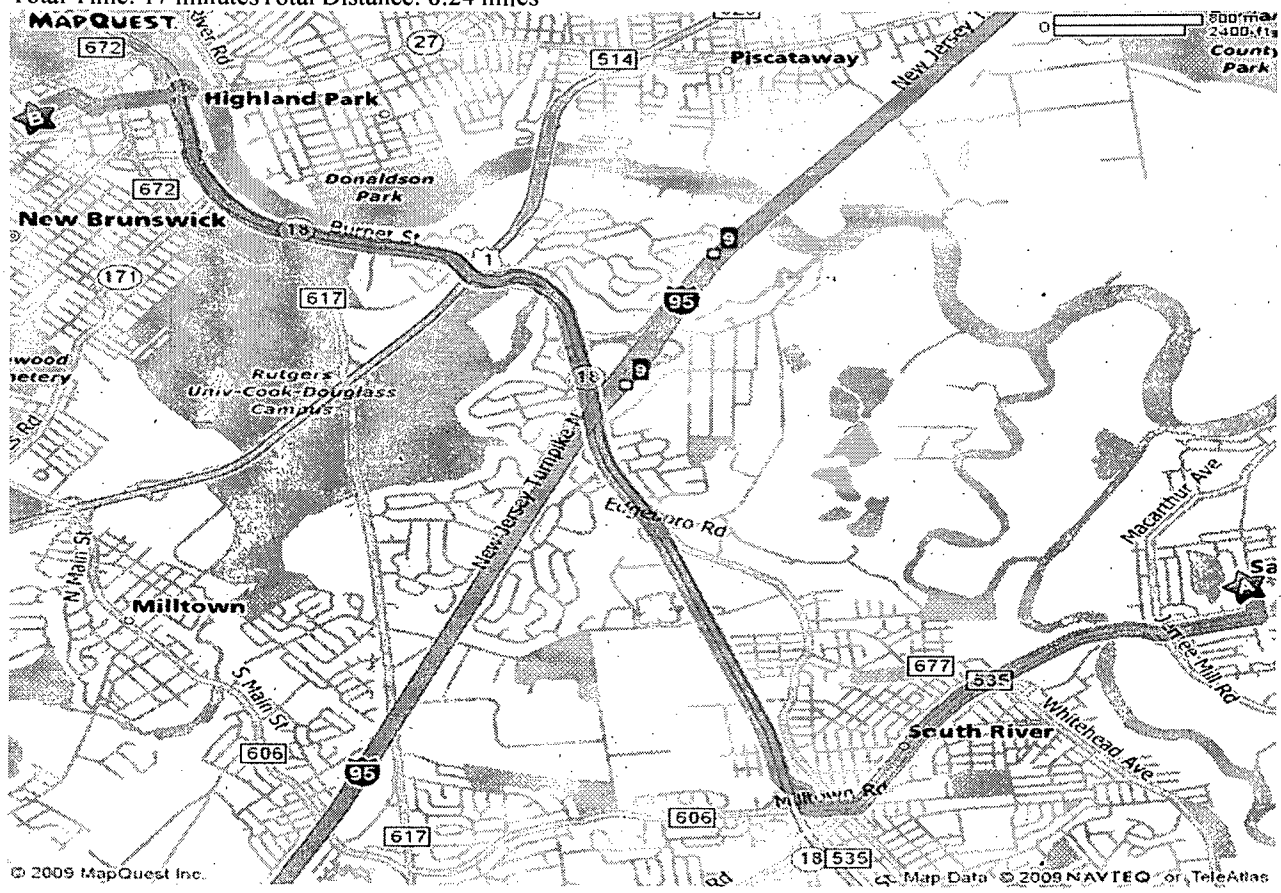

Figure 9-2. Work Care Route/Detail Map(s)

Total Time: 18 minutesTotal Distance: 10.58 miles
A: Sayreville, NJ 08871

1:	Start out going EAST on MAIN ST/CR-670 E toward ALLGAIR AVE. Continue to follow MAIN ST.	3.3 mi
2:	Turn SLIGHT RIGHT onto CR-670/MAIN ST.	0.8 mi
3:	Merge onto GARDEN STATE PKWY N via the ramp on the LEFT (Portions toll).	2.9 mi
4:	Take the RT-440 exit, EXIT 127, toward I-287.	1.1 mi

5:	Merge onto NJ-440 S.	0.7 mi
6:	Merge onto CR-514 W/WOODBRIDGE AVE toward BONHAMTOWN.	1.2 mi
7:	Take the exit toward RARITAN CENTER.	0.3 mi
8:	Keep LEFT at the fork in the ramp.	0.0 mi
9:	Stay STRAIGHT to go onto RARITAN CENTER PKWY.	0.2 mi
10:	End at 135 Raritan Center Pkwy Edison, NJ 08837-3625	

B: 135 Raritan Center Pkwy, Edison, NJ 08837-3625
Total Time: 18 minutesTotal Distance: 10.58 miles

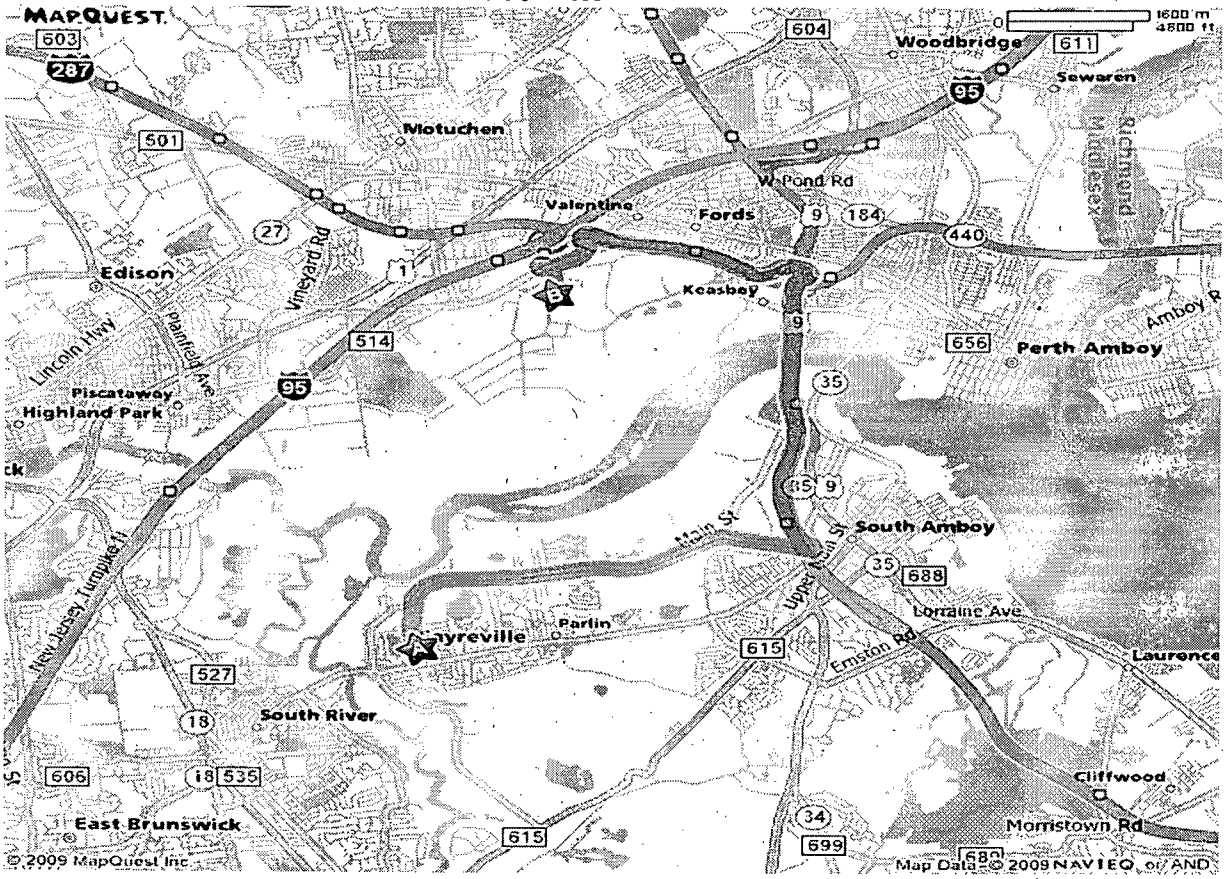

Table 9-2. Emergency Procedures

EMERGENCY	RESPONSE PROCEDURES		
	Communication	Mitigation/Control	Evacuation
Medical Emergency	If life-threatening, contact 911 immediately and notify RM.	If qualified, perform First Aid-CPR. Keep victim calm and watch for symptoms of shock. Emergency response personnel will transport victims to hospital.	Do not move victim unless imminent threat (e.g., fire, explosion, chemical exposure, etc.) is present.
Chemical Exposure	Report incident to RM immediately.	Refer to chemical safety card or MSDS for appropriate treatment measures.	Remove individual from danger area.
Contaminated Personnel* * Involving life threatening injury or exposure.	Contact 911 immediately and notify RM.	Send an individual to site entrance to direct emergency response personnel to the victim(s). Emergency response personnel will transport victims to hospital.	Do not move victim unless imminent threat (e.g., fire, explosion, chemical exposure, etc.) is present.
Other Incident/Near Miss	Report incident to RM immediately. RM will contact safety department.	For non-life threatening injuries or illness, transport victim to the hospital listed in Figure 9-1.	None anticipated
Severe Weather	RM will notify foreman via radio when severe weather is approaching or use the following signal:	Allow sufficient time for decontamination and shut down of operations.	If severe weather is imminent, evacuate to the following shelter(s):
Tornado	RM will notify foreman via radio if severe weather may result in tornado activity or use the following signal:	Allow sufficient time for decontamination and shut down of operations.	Tornado shelter location(s):
Small Fire* * Less than the size of a small trash can.	Notify RM/foreman to contact 911 immediately. Notify all personnel evacuate or use the following signal:	Determine if fire can be safely contained with a fire extinguisher.	See evacuation route map(s). Exit facility and muster at the following location(s):
Large Fire/Explosion	Notify RM/foreman to contact 911 immediately. Notify all personnel to evacuate or use the following signal:	None anticipated. Evacuate immediately.	See evacuation route map(s). Exit facility and muster at the following location(s):
Spills/Release	Notify RM. RM will contact OSC and determine if additional agencies must be notified.	Don Level B PPE (see HASP). Complete THA. Use spill kit and diking procedures to contain spill.	See evacuation route map(s). Exit facility and move upwind at least 1000 feet.
Security Threat	Notify RM. Contact 911.	Keep vehicles locked and valuables out of sight.	None anticipated.
Confined Space Emergency	See Permit.	See Permit.	See Permit.

10.0 PERSONNEL ACKNOWLEDGEMENT

By signing below, the undersigned acknowledges that he/she has read and reviewed the AECOM HASP for the Raritan Bay Slag Pile site and has received a site orientation in accordance with ERRS-Specific Policy 006, Pre-Operations & Site Set-Up. The undersigned also acknowledges that he/she has been instructed in the contents of this document and understands the information pertaining to the specified work, and will comply with the provisions contained therein.

PRINT NAME	SIGNATURE	ORGANIZATION	DATE
Carl Duffy	Carl Duffy	ET/AECOM	5/18/09
M. Greene	Morris Greene	ET/AECOM	5/18/09
Jean C Martinez	[illegible]	C&S Fencing	5/18/09
Rogelio Pina	[illegible]	C&S Fencing, Inc.	5/18/09
[illegible]	[illegible]	C S Fence	5/18/09
Eric Stout	[illegible]	AECOM	6-1-09
Nick Cabo	Nick Cabo	AECOM	6/1/09

Attachment A

Task Hazard Analyses

TASK HAZARD ANALYSIS (THA)
RARITAN BAY SLAG PILE SITE
OLD BRIDGE, NEW JERSEY

Evaluated by: Brett Hodgson, CSP, OHST

Date: April 2009

TASK NAME

MOBILIZATION/SITE SET-UP

TASK DESCRIPTION

This task hazard analysis refers to the process of mobilizing and demobilizing the people and the materials to complete the tasks outlined in the HASP/work plan. This applies primarily to moving/loading/unloading of equipment and materials and the set up of office trailers, fencing and work zones. This THA does not cover the actual hazards present within the exclusion zone and work areas. This THA does apply whenever new materials are brought to the site or removed from the site.

CHEMICAL EXPOSURE HAZARDS

- None anticipated

PPE

Level D

- High-visibility reflective safety vest
- ANSI approved hardhat.
- ANSI approved safety glasses.
- ANSI approved steel toe safety shoes/boots.

OTHER SAFETY EQUIPMENT

- Leather gloves when handling sharp object or operating powered equipment
- Hearing protection (minimum 29 NRR)
- Fall protection (contact Safety Professional)
- First aid kit
- Fire extinguisher

PHYSICAL HAZARDS

- Cuts/lacerations (handling of sharp objects, etc.)
- Heavy lifting (objects over 49 pounds)
- Equipment traffic (bobcat, forklift, street traffic, etc.)
- Slips/trips/falls/protruding objects
- Heat/cold stress
- Hazardous noise levels
- Falls/elevated heights (4 feet or more above next lower level, site trailer set-up, etc.)
- Falling debris (bricks, glass)
- Overhead powerlines
- Street traffic/pedestrians

APPLICABLE OPERATIONAL SAFETY PROCEDURES

- SH&E 201, General Safety Rules
- SH&E 210, Walking/Working Surfaces Protection
- SH&E 404, Manual Materials Handling
- SH&E 505, Powered Hand Tools
- SH&E 506, Manual Hand Tools

ADDITIONAL SAFETY CONSIDERATIONS

1. Use spotters when loading/unloading heavy equipment, forklifts, etc. Stand clear of these operations.
2. Do not enter tank, vats, sumps, holes, or other potential confined spaces without a Confined Space Entry Procedure, Hazard Evaluation, and Permit completed.
3. Do not enter building until Structural Engineer has signed off on report.

MONITORING PROCEDURES

Monitoring is not anticipated for this task.

TASK HAZARD ANALYSIS (THA)
RARITAN BAY SLAG PILE SITE
OLD BRIDGE, NEW JERSEY

Evaluated by: Sean Liddy, CHST

Date: May 2009

TASK NAME

FENCE POST INSTALLATION

TASK DESCRIPTION

Using a piece of heavy equipment (backhoe/Bobcat) with auger attachment, task involves auguring fence post holes to allow subcontractor to install fencing at site. Task also includes posting signage on fencing.

CHEMICAL EXPOSURE HAZARDS

- Metals (Lead, Arsenic, Antimony, Copper)

PPE

Modified Level D

- High-visibility reflective safety vest (when working near active roadways, heavy equipment, drill rigs, spotting).
- ANSI approved hardhat.
- ANSI approved safety glasses.
- ANSI approved steel toe safety shoes/boots.
- Protective chemical gloves (inner & outer), coveralls (tyvek®), and rubber boots/booties (anyone with the potential to contact contaminated materials, including contact during sample collection and handling).

OTHER SAFETY EQUIPMENT

- Leather gloves when handling sharp object or operating powered equipment
- Hearing protection (minimum 29 NRR)
- First aid kit
- Fire extinguisher
- Eye wash station
- Face shield if there is potential for splash hazard
- Full-face APR with P-100/GMC (for upgrade to Level C)

PHYSICAL HAZARDS

- Cuts/lacerations (handling of sharp objects, etc.)
- Heavy lifting (objects over 49 pounds)
- Equipment traffic (drill rig, etc.)
- Slips/trips/falls/protruding objects
- Heat stress
- Pinch point
- Hazardous noise levels
- Utilities (overhead/below surface)
- Electrical

APPLICABLE OPERATIONAL SAFETY PROCEDURES

- SH&E 201, General Safety Rules
- SH&E 207, Contractor/Subcontractor SH&E Requirements
- SH&E 310, Overhead Electrical Lines
- SH&E 404, Manual Materials Handling
- SH&E 505, Powered Hand Tools
- SH&E 506, Manual Hand Tools
- SH&E 513, Heavy Equipment Operations

ADDITIONAL SAFETY CONSIDERATIONS

1. Use spotters when using heavy equipment... Ensure unnecessary personnel stand clear of these operations. Maintain cleared/safe distance from equipment.
2. Prior to the start of site work each day, inspect all equipment and complete inspection form. The inspection will be documented in the field records, and the records will be maintained at the site. Defective equipment shall be repaired prior to use.
3. Self retracting cutting devices are only to be used.
4. Follow SH&E SOP 403 for heavy equipment ops.

MONITORING PROCEDURES

PARAMETER	LOCATION AND INTERVAL	RESPONSE LEVEL (Meter units/ppm above background)	RESPONSE
Dust, Mist, Aerosols (Total by PDR)	Continually in the worker's breathing zone during intrusive activities involving impacted materials. In addition, site perimeter monitoring may be initiated by the SSO based on elevated air monitoring results.	Initial excavation or disturbance of unknown materials	Level C ensemble as listed in this HASP and per SSO and SH&E Manager.
		< 0.25 mg/m^3 (Sustained for more than 5 minutes)	Continue Level D work and continue monitoring.
		≥ 0.25 mg/m^3 (Sustained for more than 5 minutes)	Upgrade to Level C PPE. Contact the RM and SSO, implement mitigation measures, and continue Level C (minimum GMA/P100 cartridges or equivalent chemical cartridge combined with P100) and confinue monitoring. Personnel air sampling required (see below).

Evaluated by: Sean Liddy, CHST

Date: May 2009

		≥ 5 mg/m^3 (Sustained for more than 5 minutes)	Temporarily cease work operations, contact the RM and SH&E Manager to discuss improving site mitigation measures. Possible upgrade to Level B for exclusion zone workers.
Dust, Mist Aerosols (8-hr TWA)	Personal air samples taken in worker's breathing zone during intrusive activities involving impacted materials.	≥ 0.25 mg/m^3 Collect cassettes for analysis	Consult with SH&E Department.

AECOM

TASK HAZARD ANALYSIS (THA)
RARITAN BAY SLAG PILE SITE
OLD BRIDGE, NEW JERSEY

Evaluated by: Carl Duffey

Date: June 2009

TASK NAME

CLEARING & GRUBBING

TASK DESCRIPTION

Using a piece of heavy equipment (excavator) with hydraulic thumb attachment, task involves using the excavator to clear wooded area for fence installation. A spotter will be used to spot for this operation.

CHEMICAL EXPOSURE HAZARDS

- N/A

This area has been sample and was found to be free of contamination.

PPE

Modified Level D

- High-visibility reflective safety vest (when working near active roadways, heavy equipment, drill rigs, spotting).
- ANSI approved hardhat.
- ANSI approved safety glasses.
- ANSI approved steel toe safety shoes/boots.
- Protective chemical gloves (inner & outer), coveralls (tyvek®), and rubber boots/booties (anyone with the potential to contact contaminated materials, including contact during sample collection and handling).

OTHER SAFETY EQUIPMENT

- Leather gloves when handling sharp object or operating powered equipment
- Hearing protection (minimum 29 NRR)
- First aid kit
- Fire extinguisher
- Eye wash station

PHYSICAL HAZARDS

- Cuts/lacerations (handling of sharp objects, etc.)
- Heavy lifting (objects over 49 pounds)
- Equipment traffic (drill rig, etc.)
- Slips/trips/falls/protruding objects
- Heat stress
- Pinch point
- Hazardous noise levels
- Utilities (overhead/below surface)
- Electrical

APPLICABLE OPERATIONAL SAFETY PROCEDURES

- SH&E 201, General Safety Rules
- SH&E 207, Contractor/Subcontractor SH&E Requirements
- SH&E 310, Overhead Electrical Lines
- SH&E 404, Manual Materials Handling
- SH&E 505, Powered Hand Tools
- SH&E 506, Manual Hand Tools
- SH&E 513, Heavy Equipment Operations

ADDITIONAL SAFETY CONSIDERATIONS

1. Use spotters when using heavy equipment... Ensure unnecessary personnel stand clear of these operations. Maintain cleared/safe distance from equipment.
2. Prior to the start of site work each day, inspect all equipment and complete inspection form. The inspection will be documented in the field records, and the records will be maintained at the site. Defective equipment shall be repaired prior to use.
3. Self-retracting cutting devices are only to be used.
4. Follow SH&E SOP 403 for heavy equipment ops.

MONITORING PROCEDURES

PARAMETER	LOCATION AND INTERVAL	RESPONSE LEVEL Meter units/ppm above background)	RESPONSE

AECOM

DATE: 06/05/09
RARITAN BAY SLAG PILE
TASK HAZARD ANALYSIS FORM

ADMINISTRATIVE INFORMATION

Job/Task Name: Clearing & Grubbing, small trees (<3" diameter) and shrubs

Project Name: Raritan Bay Slag Pile	Project Location: Sayreville, NJ
Project Manager: Rob Flowers	Analysis Performed By: Sean Liddy/Carl Duffey
Date Job/Task to be perfonned: 6/1/09 thru 6/5/09	Type of Job/Task: ☒ One time ☐ Routine job/task
Responsible Organization: AECOM	Job Supervisor: Carl Duffey

JOB EVENT SEQUENCE

LIST ONE STEP OF THE JOB FOR EACH LINE. (ATTACH ADDITIONAL JOB EVENT SEQUENCE FORM(S) AS NECESSARY) PAGE 1 OF 2

1. Pre-operational check of equipment	5. Operator and spotter check for utility mark-outs
2. Ensure area cleared for utilities (over/under)	6. Operator and spotter check for overhead utilities/lines
3. Track equipment to task location ensuring clear route	7. Spotter maintains clear distance
4. Spotter identifies area/item for removal	8. Equipment used to clear and stockpile debris.

CHEMICAL HAZARDS

- ☐ Asbestos
- ☐ Acids
- ☐ Caustics
- ☐ Chlorinated hydrocarbons (TCE)
- ☐ Lead
- ☐ Gasoline or diesel fuel
- ☐ BTEX
- ☐ Jet fuel (JP-4, JP-5, JP-8)
- ☐ PCBs
- ☐ Cadmium
- ☐ Compressed gases/asphyxiants
- ☐ PAHs
- ☐ Welding fumes
- ☐ Hydrogen sulfide
- ☐ Other metals
- ☐ Bunker fuel/oil
- ☐ Explosives (TNT)
- ☐ Dust
- ☐ Dioxins
- ☐ Pesticides/Herbicides
- ☐ MTBE
- ☐ Methylene chloride
- ☐ Waste mil
- ☐ Hydraulic fluid
- ☐ Petroleum hydrocarbons

PHYSICAL HAZARDS

- ☐ Electricity/High voltage
- ☐ Elevated work areas (fall hazard)
- ☐ Non-ionizing radiation (RF/UV/IR)
- ☐ OEA/XO
- ☐ Hand tool usage
- ☐ Power tool usage
- ☒ Heavy equipment operations
- ☐ Drill rig (HSA, DP, Air Rotary)
- ☐ Excavations (engulfment/collapse)
- ☐ Confined space entry
- ☐ Ionizing radiation
- ☐ Eye hazards (impact, light, etc.)
- ☐ Slips, trips, and falls
- ☐ Hazardous noise
- ☐ Heat or cold stress
- ☐ Oxygen-deficient atmosphere
- ☐ Oxygen-enriched atmosphere
- ☐ Explosive atmosphere
- ☐ Powder-actuated tools
- ☐ Vehicular traffic

Other Chemical/Physical Hazards (List): Ensure trees fall in direction away from ground personnel. For trees larger than 3" in diameter, chainsaw or other cutting devices should be used. Work is non-intrusive, therefore exposure potential not present. Review of SH&E 401 prior to use of chipper.

PERSONAL PROTECTIVE EQUIPMENT (PPE) REQUIRED

Boots:
- ☐ Rubber (safety-toe)
- ☒ Leather (safety-toe)

General:
- ☐ Coveralls _____(type)
- ☒ Hearing protection (plugs/muffs)
- ☐ FF APR _____(cartridges)
- ☐ ½-face APR _____(cartridges)
- ☐ Safety harness & lanyard
- ☒ ANSI-approved Hard hat

Eye Protection:
- ☐ Faceshield
- ☒ Safety glasses or goggles
- ☐ Welder's helmet/goggles

Gloves:
- ☐ Chemically-protective _____(type)
- ☒ Leather/cloth
- ☐ Welder's
- ☐ Electrical safety _____(volts)

Other (List): High-Vis Safety Vest

OTHER SAFETY EQUIPMENT/CONSIDERATIONS

- ☒ Fire ext. 1A:10B:C (rating)
- ☒ First-aid kit
- ☐ Dust control/mitigation
- ☐ Portable eyewash
- ☐ Fire watch
- ☐ Traffic control measures

Other (List): _____

INSPECT/PERMIT REQUIREMENTS	EQUIPMENT TO BE USED
	JD 160

APPLICABLE SOPs (See HASP/SSHP/APP)

SH&E 109, SH&E 113, SH&E 401, SH&E 513, SH&E 516

TRAINING REQUIREMENTS

Site Specific Safety Briefing, 40-hr HAZWOPER, FA/CPR, .

ACCEPTED SIGNATURES

Site/Field Supervisor: Carl Duffey	SSO/SH&E: Carl Duffey/Sean Liddy, CHST

AECOM

DATE: 06/05/09
RARITAN BAY SLAG PILE
TASK HAZARD ANALYSIS FORM

JOB EVENT SEQUENCE (CONT'D)	
LIST ONE STEP OF THE JOB FOR EACH LINE.	PAGE 2 OF 2
11. Debris sorted and prepared for chipper. Small branches removed prior to insertion into chipper (ideally one stalk inserted at time).	
12. Preoperational check of chipper (ensure E-stop buttons and bars functional)	
13. Ensure location of chip pile is clear and marked to prevent personnel from being struck by flying debris.	
14. Ensure no loose clothing or other items that could get caught are worn.	
15. As chipper takes debris, personnel stand clear. Do not attempt to un-jam stuck item by hand. Use stick or pole.	
16.	
17.	
18.	
19.	
20.	

MONITORING PROCEDURES

Monitoring not anticipated for this task.

AECOM

DATE: 06/05/09
RARITAN BAY SLAG PILE
TASK HAZARD ANALYSIS FORM

I HAVE READ OR BEEN BRIEFED ON THE HAZARDS AND PROTECTIVE MEASURES IDENTIFIED FOR THE ABOVE-LISTED JOB/TASK AND FULLY UNDERSTAND THE JOB/TASK-SPECIFIC REQUIREMENTS THAT HAVE BEEN ESTABLISHED FOR IT.

DATE	EMPLOYEE NAME	EMPLOYEE SIGNATURE	EMPLOYER NAME
6/8/09	Nick Cabo	Nick Cabo	AECOM

Attachment B

Material Safety Data Sheets

Attachment C

Chemical Safety Cards

Attachment D

Client-Specific Health and Safety Guidelines

Attachment E

Health and Safety Plan Supplements